

REMARKS

This Amendment and Response are made in reply to the Office Action dated March 20, 2008, in which the following rejections were made:

Claim 8 was rejected under 35 USC §112, second paragraph as being indefinite for failing to provide an antecedent to “the pipe”;

Claims 1-5 and 8-10 were rejected under 35 USC § 102(b) as anticipated by Tan (U.S. Pat. 5,687,759); and

Claims 6 and 7 were rejected under 35 USC § 103(a) as obvious over Tan in view of Kubiak (U.S. Pat. 4,025,045).

The Applicants respectfully traverse these rejections below.

Claims 1-10 previously were pending. By the present Amendment, claim 8 is amended. Claims 1-10 remain pending for consideration.

Claim 8 was rejected under 35 USC § 112, second paragraph for lack of antecedent basis. Claim 8 has been amended to depend from Claim 6, which provides antecedent basis for “the pipe” of Claim 8. Accordingly, the Applicants respectfully request that the rejection of Claim 8 under 35 USC § 112 be withdrawn.

Claims 1-5 and 8-10 were rejected under 35 USC § 102(b) as anticipated by Tan. Claim 1 recites a valve arrangement with a housing, an inlet connection and an outlet connection, which are connected with each other via a flow path, in which is located a closing device, which has a valve seat and a valve element interacting with the valve seat, the valve element being loaded in the direction of

the valve seat by a resetting device and being acted upon on the side facing the valve seat by a pressure in a first pressure chamber, said pressure corresponding to the pressure in the inlet connection, when the closing device is closed, and on the side facing away from the valve seat by the pressure in a second pressure chamber, which is connected with the outlet connection via a channel arrangement, in which is located at least one auxiliary valve, and with the first pressure chamber via a throttle, wherein the channel arrangement ends in a suction nozzle arrangement, which is located in the flow path.

Tan discloses a servovalve 10 that includes a casing 12 presenting an inlet 14 and an outlet 16, a primary valve 18, and a pilot valve 20. (See Tan, column 3, lines 42-48). The primary valve 18 includes a valve plug 60 movable to close an opening 24 formed in the casing 12 between the inlet 14 and the outlet 16. (See Tan, column 4, lines 25-31). A diaphragm 34 supports the valve plug 60 and separates a control chamber 32 from an inlet chamber 26 adjacent the inlet 14. (See Tan, column 4, lines 31-50). A conduit 56, a fluid passage 58, and an orifice 40 define part of a control flow path between the control chamber 32 and the outlet 16. (See Tan, column 4, lines 15-24). An electromagnetic core 80 moves a control plug 82 of the pilot valve 20 to vary flow through the control flow path, so as to control the position of the primary valve plug 60. (See Tan, column 5, line 10 to column 6, line 34).

An anticipation rejection is improper unless a single prior art reference shows or discloses each and every claim recitation. Tan does not show or disclose each and every recitation of Claim 1.

First, Tan does not show or disclose a suction nozzle arrangement, as recited by Claim 1. Rather, the Examiner concedes that Tan shows only the

restricted orifice 40. (See Tan, Figures 1-2; see also, Office Action, paragraph 5). As shown in Tan, the control plug 82 is supported for movement into and out of the restricted orifice 40 in order to close or to initiate flow through the servovalve 10. (See Tan, column 5, line 25 to column 6, line 34).

By contrast, the present invention provides a suction nozzle arrangement 18, in addition to an auxiliary valve 15, “so that the fluid flowing in the flow path can practically suck off the fluid located in the channel arrangement” 14. (Specification, paragraph [0009]).

Tan’s restricted orifice 40 does not and cannot function as a *suction* nozzle arrangement. Rather, Tan expressly discloses that the restricted orifice 40 cooperates with the control plug 82 to provide varying *restriction* of a flow between the control chamber 32 and the outlet 16. (See Tan, column 2, lines 45-52; column 5, line 53 to column 6, line 34). Since Tan does not show or disclose at least the suction nozzle arrangement recited by Claim 1, Tan does not anticipate Claim 1. Accordingly, Applicants respectfully submit that the rejection of Claim 1 under 35 USC § 102(b) is improper and should be withdrawn.

At least because claims 2-10 depend directly or indirectly from Claim 1 and include additional recitations thereto, Tan also fails to anticipate Claims 2-10 for at least the reasons enumerated above. Therefore, the rejections of Claims 1-5 and 8-10 under 35 USC § 102(b) are improper and should be withdrawn.

Additionally, Claim 2 recites that at least one suction nozzle is directed towards the outlet connection and has a bordering wall, whose outside is exposed to fluid flowing in the flow path. Although the Examiner asserts that the restricted orifice 40 is a suction nozzle directed towards an outlet connection, the restricted orifice 40 is not a suction nozzle, and is directed perpendicular to the

direction toward the outlet 16 shown in Figure 2 of Tan. Thus, Tan does not show or disclose a suction nozzle that is directed towards the outlet connection. Moreover, Tan does not show or disclose a bordering wall, whose outside is exposed to fluid. Although Examiner asserts that the casing 12 anticipates this feature, Applicants respectfully submit that only an inner surface of the casing 12 is exposed to fluid. (See Tan, col. 3, ll. 49-57). For at least these additional reasons, the rejection of Claim 2 under 35 USC § 102(b) is improper and should be withdrawn.

Claims 6 and 7 were rejected under 35 USC § 103(a) as obvious over Tan in view of Kubiak (U.S. Pat. 4,025,045). Claim 6 depends from Claim 1 and further recites that the suction nozzle arrangement has a pipe, which has a slot in the direction of the outlet connection. Claim 7 depends from Claim 6.

A *prima facie* case of obviousness under 35 USC §103(a) is established if the teachings from the prior art itself appear to suggest the claimed subject matter “as a whole” to a person of ordinary skill in the art.

Examiner concedes at page 4 of the Office Action that Tan fails to show, disclose, teach, or suggest a *pipe* having a slot. However, the Examiner asserts that it would have been obvious to modify Tan by manufacturing a “*nozzle* with a slot as taught by Kubiak in order to decrease the possibility of fluid being [sic] through the nozzle in the reverse direction.” (Office Action, p. 4; emphasis added). As a threshold matter, Applicants respectfully submit that a nozzle is not necessarily a pipe. Thus, even if the combination of Tan and Kubiak taught a nozzle with a slot, the combination nonetheless would fail to teach or suggest a pipe, which has a slot, as recited by Claim 6.

Further, one of ordinary skill would not have been motivated to combine Kubiak with Tan as proposed by Examiner. Tan describes the restricted orifice 40 as a key part of the pilot valve 20, which controls the flow of fluid through the pilot *outlet* passage from the control chamber 32. (See Tan, column 5). Contrary to Examiner's suggested motivation to combine Tan with Kubiak, Tan fails to teach or even remotely suggest that reversal of flow might occur in the pilot outlet passage.

Kubiak discloses a generally cylindrical tubular guard member for an airless spray pistol. The guard member is attached to a nozzle end of a spray pistol and projects beyond the nozzle orifice a distance sufficient to prevent injection of paint spray into human flesh positioned at the terminus of the guard member. (See Kubiak, Abstract). Kubiak expressly describes an orifice 21 with a major axis and a minor diameter, provided in a nozzle tip 19 at a nozzle discharge end 15 of the spray pistol 10. (See Kubiak, column 5, lines 33-44). The purpose of the orifice 21 is to provide an elongated oval spray pattern. (See Kubiak, column 5, lines 15-22).

Contrary to Examiner's proposed motivation to combine Kubiak with Tan, Kubiak fails to teach or suggest that the orifice 21 might prevent fluid "[passing?] through the nozzle in the reverse direction." (Office Action, p. 4). Indeed, Kubiak describes fluid passing through the orifice 21 at

operating pressures between 3,300-3,600 pounds per square inch and theoretical maximum pressure on the order of 6,000 pounds per square inch although for normal nozzle sizes the usual operating pressure range is between 900 and 2900 p.s.i. (Kubiak, column 1, lines 36-40).

Thus, Kubiak fails to teach or even remotely suggest that fluid might pass through the orifice 21 in a reverse direction. Furthermore, Applicants fail to see

how the orifice 21 could possibly be effective for preventing flow in a reverse direction, as suggested by Examiner.

In summary, neither Tan nor Kubiak teaches flow reversal as a possible problem, and the orifice 21 of Kubiak does not provide a structure capable of preventing flow reversal. Moreover, rather than preventing a reverse flow that is not taught by either Tan or Kubiak, or providing a suction effect not taught by either Tan or Kubiak, incorporating Kubiak's orifice 21 in place of Tan's orifice 40 predictably would render Tan's pilot valve 20 unsuitable for its intended purpose, at least because the slightest misalignment of the non-circular orifice 21 and the control plug 82 would cause leakage resulting in "drift" of the primary valve plug 60. For at least these reasons, Applicants respectfully submit that one of ordinary skill would not be motivated to combine Tan and Kubiak. Thus, the combination is improper under 35 USC § 103.

Furthermore, Kubiak's orifice 21 is not exactly a slot, and the orifice 21 is not provided on anything resembling a pipe. Tan fails to teach or suggest a pipe or a slot. The combination of Kubiak with Tan similarly fails to teach or suggest at least a suction nozzle arrangement that has a pipe, which has a slot in the direction of the outlet connection. Thus, even if Tan and Kubiak were combined, the improper combination still would fail to teach or suggest what is recited by claim 6.

Since the cited references do not teach or suggest the recitations of Claim 6, Applicants respectfully submit that the rejection of Claim 6 under 35 USC § 103(a) is improper and should be withdrawn. At least because Claim 7 depends from Claim 6 and includes additional recitations thereto, Applicants

respectfully submit that the obviousness rejection of Claim 7 under 35 USC § 103(a) also is improper and should be withdrawn.

As Applicants have traversed each and every rejection raised by Examiner, it is hereby respectfully requested that Examiner withdraw the rejections of Claims 1-10 and pass Claims 1-10 to issue.

Applicants believe that no additional fees are due in connection with this Amendment and Response. If such additional fees are deemed necessary, Attorneys for Applicants hereby authorize the Commissioner to deduct such fees from our Deposit Account 13-0235.

Respectfully submitted,

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